different behavior. The nitride selectivity for Ar is highest at low Ar flows and decreases at higher argon flow. However, the cited $C_4F_6$ patent to Hung et al. demonstrates that in narrow geometries such as SAC structures, a higher argon flow is required to prevent etch stop. On the other hand, the data of FIG. 8 shows that nitride selectivity for Xe rises with increasing Xe flow. As a result, no etch stop and high nitride selectivity can both be attained with high flows of Xe. The data of FIG. 8 are derived from separately measured oxide and nitride losses. The oxide losses (oxide etch rate) for the two diluents do not significantly differ, both decreasing about 30% from 20sccm to 500sccm of the diluents. However, the nitride loss with Ar remains substantially constant from 100sccm to 500sccm while that with Xe drops by almost a factor of three between 20sccm and 500sccm.

**Replace all claims with:**

1. (Already Amended) A process for etching an oxide layer in the presence of a nitride layer, comprising the steps of:

flowing into a plasma reaction chamber a gas mixture comprising a first amount of hexafluorobutadiene and a second amount of xenon and including substantially no carbon monoxide, wherein a ratio of said second amount to said first amount is at least one;

applying a first level of RF power to a pedestal electrode supporting a substrate containing said oxide and nitride layers; and

exciting said gas mixture into a plasma to thereby selectively etch said oxide layer to said nitride layer.

2. (Already Amended) The process of Claim 1, wherein said oxide layer overlies said nitride layer and said ratio is at least ten, to thereby etch said oxide layer selectively to said nitride layer.

3. (Twice Amended) A process for etching an oxide layer in the presence of a nitride layer, comprising the steps of:

flowing into a plasma reaction chamber a gas mixture comprising a first amount of hexafluorobutadiene and a second amount of xenon and including substantially no carbon monoxide, wherein a ratio of said second amount to said first amount is at least one;

applying a first level of RF power to a pedestal electrode supporting a substrate containing said oxide and nitride layers; and

exciting said gas mixture into a plasma to thereby selectively etch said oxide layer to said nitride layer;

wherein said oxide layer overlies said nitride layer and said ratio is at least ten, to thereby etch said oxide layer selectively to said nitride layer; and,

wherein said nitride layer comprises a nitride formed into a corner feature.

4. The process of Claim 3, wherein said ratio of said second amount to said first amount is at least twenty.

octafluorocyclobutane, and octofluoropentadiene. .

12. The process of Claim 1, wherein said exciting step includes applying an oscillatory electrical signal to excite said gas mixture into a plasma in a region remote from said pedestal electrode.

13. The process of Claim 12, wherein said oscillatory electrical signal is coupled to an inductive coil adjacent to said chamber.

14. (Already Amended) The process of Claim 12, wherein said applying steps applies at least 1600W to said pedestal electrode normalized to a 200mm wafer.

15. The process of Claim 1, wherein said oxide layer is preformed with holes extending downwardly from a top surface thereof and corners of said oxide layer at tops of said holes are exposed during the process.

16. The process of Claim 1, wherein processing conditions are chosen to produce a processing window of 25% in the amount of the fluorine-containing gas.

17. (Already Amended) A process of etching an oxide layer selectively to an underlying nitride layer, comprising the steps of:

flowing into a plasma reaction chamber a gas mixture comprising a first amount of hexafluorobutadiene and a second amount of xenon and including substantially no carbon monoxide;

exciting said gas mixture into a plasma in a region of said chamber remote from a wafer supported on a pedestal electrode; and

applying RF power to said pedestal electrode to create a DC bias.

18. (Amended) The process of Claim 17, wherein said RF power is applied in an amount of 1500W normalized to a 200mm wafer.

19. The process of Claim 17, wherein said second amount of xenon is at least equal to said first amount of hexafluorobutadiene.

20. The process of Claim 19, wherein said second amount of xenon is at least ten times said first amount of hexafluorobutadiene.

21. A process for etching an oxide layer preformed with holes extending downwardly from a top surface thereof, comprising the steps of:



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flowing into a plasma reaction chamber a gas mixture comprising a first amount of a fluorine-containing gas and a second amount of xenon, wherein a ratio of said second amount to said first amount is at least one;

applying a first level of RF power to a pedestal electrode supporting a substrate containing said oxide and non-oxide layer; and

exciting said gas mixture into a plasma to etch said oxide layer, wherein corners of said oxide layer at tops of said holes are exposed during the process.

22. The process of Claim 21 carried out in the presence of a nitride layer, wherein said plasma etches said oxide layer selectively to said nitride layer.

23. The process of Claim 22, wherein said oxide layer overlies said nitride layer.

24. The process of Claim 21, wherein said fluorine-containing gas comprises a fluorocarbon.

25. The process of Claim 24, wherein said fluorocarbon consists of at least four carbon atoms, at least an equal number of fluorine atoms, and no more than two hydrogen atoms.

26. The process of Claim 24, wherein said fluorocarbon is hydrogen free.

27. The process of Claim 25, wherein said fluorocarbon is selected from the group consisting of hexafluorobutadiene, hexafluorocyclobutene, hexafluorobenzene, octafluorocyclobutane, and octofluoropentadiene.

28. The process of Claim 27, wherein said fluorocarbon comprises hexafluorobutadiene.



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29. The process of Claim 28, wherein said oxide layer overlies a nitride layer and said plasma etches said oxide layer selectively to said nitride layer.



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